



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/606,523	06/26/2003	Alessandro C. Callegari	YOR920000655US2	5736

22150 7590 02/24/2006
F. CHAU & ASSOCIATES, LLC
130 WOODBURY ROAD
WOODBURY, NY 11797

EXAMINER

PADGETT, MARIANNE L

ART UNIT PAPER NUMBER

1762

DATE MAILED: 02/24/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/606,523

Applicant(s)

CALLEGARI ET AL.

Examiner

Marianne L. Padgett

Art Unit

1762

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 8/8/2005 & 12/5/2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 8-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 8-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Art Unit: 1762

1. The amendment to the specification made on 12/5/2005 satisfactorily commands the related application information.

2. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

3. Claims 8-11 & 14-19 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-6 of U.S. Patent No. 6,665,033 B2. Although the conflicting claims are not identical, they are not patentably distinct from each other because of reasons as given in section 3 of the action mailed 5/4/2005. The examiner agrees that divisionals made in response to restriction requirements are not subject to obviousness double patenting rejections, however it is also true the applicant may not have claims that cover overlapping scope or only obviously different into separate patents if they are not terminally disclaimed. The restriction in the parent case was too different patently distinct species, and for the case of species the restriction is directed to the particular species listed not the particular claims that the examiner associated with some (especially as technically we are not supposed to list particular claims associated with the particular species) the elected species was "(A) the specifics of the method for preparing and alignment layer surface comprised the step of introducing reactive gas to the ion beam to saturate dangling bonds on the surface". Note that present claims 8-11 & 14-19 as presently written can be considered to be encompassed in this species (A) as delineated in the parent case, because neither claim 8 nor 14 exclude the reactive components that produce the saturation of the dangling bonds (i.e. the quenching, which as claimed appears to be

Art Unit: 1762

equivalent to or totally encompassing the saturation) from coming from reactive gas introduced into the ion beam. As long as the content of the claims presently under consideration can be considered to read on the species elected in the parent case, the case is not a proper divisional regardless of what it is called or what claims were tentatively listed with the separate species. The examiner would be remiss in allowing the claims to go to issue without either clear differentiation from the parent claims or a terminal disclaimer due to the overlapping scope.

It is noted that on pages 7 & 8, the paragraphs starting on lines 17 discuss quenching as supplying reactive gas to saturate dangling bonds but do not necessarily specify when the reactive gas is supplied, hence reactive gas supplied with the ion beam that reacts with dangling bonds created by the ion beam to cause saturation can be considered included in the claimed quenching to saturate, unless the process is clearly distinguished therefrom, which would appropriately remove it from the species elected in parent case.

4. Claims 8-11 and 14-19 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-2, 5-7, 9, 12 and 14 of U.S. Patent No. 6,485,614 B2 (Kato et al). Although the conflicting claims are not identical, they are not patentably distinct from each other, because of reasons discussed in section 4 of the 5/4/2005 rejection. Applicant bases their arguments for rescinding this rejection solely on whether it would extend the patent term, however that is not the only reason for making obviousness double patenting rejections, but also to provide for licensing groups of patents that do not have significantly different patented claims, therefore applicant's arguments are not persuasive.

5. Claims 8, 10, 11 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-2, 9-11 and 17 of U.S. Patent No. 6,061,114 (Callegari et al). Although the conflicting claims are not identical, they are not patentably distinct from each other, because of reasons as given in section 5 of the action mailed 5/4/2005. Note arguments in

Art Unit: 1762

section 3 above, especially with respect to dependent claims 9 plus 11 whose mixtures of gases I'll bombard onto the alignment layer would have been as expected to effectively produce the claimed quenching of saturation in the context discussed above, but could be effectively distinguished by clear sequential differences in the steps.

6. Claims 8-11 and 14-19 are rejected under 35 U.S.C. 102(e) as being clearly anticipated by Callegari et al (6,061,114), as discussed above and in section 6 of the 5/4/2005 action.

Applicant citation of page 16, lines 18-20 of the disclosure, where is found the discussion of quenching stating "an additional treatment to surface layer 112 may be carried out subsequent to ion bombardment. Such treatments will hereafter be called 'quenching'" is noted with interest. However with the preceding teachings cited above that do not limit quenching to a subsequent treatment to the ion bombardment, but appear to be more general, it cannot be unambiguously stated that the claims necessarily require the quenching to be sequential, however the citation clearly provide support for requiring such a sequence in the claims.

7 Claims 8, 10-11 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over IBM Tech. Disc. Bull., vol. 34, #4B, as discussed in section 7 of the action mailed 5/4/2005.

The above discussions concerning what the present claim language encompasses or is inclusive of when it claims "quenching... to saturate dangling bonds on the surface", is again relevant, in a gay and clear distinction of when the claimed quenching is intended to occur would distinguish unambiguously our from this IBM reference.

8. Claims 8 and 12-13 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Chaudhari et al (5,770,826), as discussed in section 8 of the action mailed 5/4/2005.

Art Unit: 1762

Applicants appear to be alleging that Chaudhari et al (826), who is teach ion treating a polyimide alignment surface with a low energy Ar⁺ beam to provide orientation, then subsequently applying neumatic liquid crystal (LC), affect no quenching/saturation of dangling bonds, however they provide no reasons why the LC layer applied to the ion bombarded surface, which has no apparent significant difference from the LC layer possibly applied by applicants' claims 20-21 would not be affecting quenching. The reference need not use the same terminology to effect the process, if there is no apparent necessary difference in the sequence of steps to produce the claimed process.

9. Claims 8 & 12-13 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 24-25, 34-36 of U.S. Patent No. 6,724,449 B1 (Andry et al). Although the conflicting claims are not identical, they are not patentably distinct from each other, because of reasons presented in section 8 above, and sections 8 & 10 of the 5/4/2005 rejection.

10. Claims 8 and 12-13 are rejected under 35 U.S.C. 102(e) as being anticipated by Andry et al (449 B1), as discussed above in sections 8-9 and 8 & 10 of the 5/4/2005 action.

See section 10 above, and note common ownership will remove this rejection, which is to different invention entities, but overlapping inventors.

11. Claims 8, 12-13, 14 and 20-21 are rejected under 35 U.S.C. 102(e) as being anticipated by Lien et al (6,682,786 B1), as discussed in section 12 of the 5/4/2005 rejection.

Again applicant has provided no reasons why Lien et al, whose col. 3, lines 21-40 discussion on energy beams indicate they are causing broken bonds, i.e., dangling bonds, where thereafter, the treated layer is exposed to LC molecules, as per disclosure of USPN 5,770,826, which was incorporated by reference, would not inherently be affecting quenching of those dangling bonds which were taught to be produced. Also discussed in section 8 above.

12. Claims 8, 12-13, 14 and 20-21 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 26 of U.S. Patent No. 6,519,018 B1

Art Unit: 1762

(Samant et al). Although the conflicting claims are not identical, they are not patentably distinct from each other, because of reasons as discussed in section 13 of the 5/4/2005 rejection. Again applicant has not explained why their allegation that steps that could perform essentially the same actions which fail to cause quenching after ion beam treatment, hence their arguments are not convincing.

13 Claims 8, 12-14 and 20-21 are rejected under 35 U.S.C. 102(e) as being anticipated by Samant et al (018B1), as applied in sections 13-14 of the 5/4/2005 rejection.

See above discussion in section 12.

14. Claims 8, 10-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakabayashi et al (5,710,608) or Shimada et al (5,030,322), in view of Pierson et al (2001/0025826 A1), as discussed in section 15 of the 5/4/2005 rejection (in section 9 for further discussion off the secondary reference).

On page 13 of their response of 8/8/2005 is assumed that the reference to claim 1 is intended to refer to claim 8, the first independent claim. However the allegation of the combination of a multitude of references is considered to be pure hyperbole, as the combination of two references would hardly be considered by reasonable person to be "a multitude of references". The examiner is further uncertain what reference applicant is referring to as "the Handschy".

The rejection as applied uses the secondary reference to Pierson et al. as a teaching reference to provide as stated how reactive gases will reduce ion induced crystal damages, not to combine the specific etching technique hence applicant's argument against combining limitations that were not actually combined in the way applicant construes, is not convincing.

15. Applicant's arguments filed 8/8/2005 & 12/5/2005 and discussed above have been fully considered but they are not persuasive.

16. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

Art Unit: 1762

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

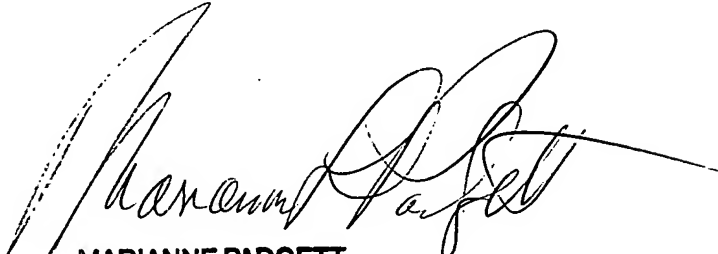
17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marianne L. Padgett whose telephone number is (571) 272-1425. The examiner can normally be reached on M-F from about 8:30 a.m. to 4:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks, can be reached at (571) 272-1423. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MLP/dictation software

2/21/2006



MARIANNE PADGETT
PRIMARY EXAMINER